

FOURIER BASED METHOD, APPARATUS, AND
MEDIUM FOR OPTIMAL RECONSTRUCTION IN
DIGITAL TOMOSYNTHESIS

ABSTRACT OF THE DISCLOSURE

A method reconstructs 3-dimensional information of an object from projection images of said object acquired by a digital tomosynthesis system having an x-ray source following a trajectory relative to the object and a detector. The method comprises determining mathematical relationships between Fourier Transforms of logical slices through the object and Fourier Transforms of projection images of the object. Moreover, a digital tomosynthesis system includes a detector and an x-ray source traversing a trajectory a constant distance from a plane containing the detector. A computer of the digital tomosynthesis system reconstructs 3-dimensional images of an object by determining mathematical relationships between Fourier Transforms of logical slices through the object with Fourier Transforms of projection images of the object.